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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,325	09/06/2000	Steven D. Nelson	14073US01	9079

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EXAMINER

CHAMBERS, TROY

ART UNIT PAPER NUMBER

3641

DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/656,325

Applicant(s)

NELSON ET AL.

Examiner

Troy Chambers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-13,31-37 and 62-65 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-13,31-37 and 62-65 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 35-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, claim 35 requires capacitors that charge in approximately five milliseconds or less. However, the charging time of a capacitor is a function of not only the capacitance of the capacitor but other factors including power supply peak power rating, load charge in volts and power supply rating. Applicant does not disclose the other factors so the claimed charging time of the specification is not enabled by the specification.
4. Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 37 recites the phrase "on the order of" 2 microfarads. The phrase "on the order of" was held to be indefinite because the specification lacked

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some standard for measuring the degree intended. Ex parte Oetiker, 23USPQ2d 1641 (Bd. Pat. App. & Inter. 1992).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-12 and 31-37 are rejected under 35 U.S.C. 102(b) and (e) as being anticipated by U.S. Patent No. 6166452 issued to Adams et al. ("Adams") and U.S. 5825098 issued to Darby. Adams discloses a plurality of igniters 10 connected to a networked electronic ordnance system via a bus controller (ECU). Darby discloses the details of the communication details of the ECU and the plurality of igniters. Both Darby and Adams qualify as prior art under a single rejection under 35 U.S.C. 102 because Adams incorporated Darby into its specification by reference.

7. With respect to claims 1, 10, 31, 32 and 34 refer to Adams, col. 4, line 64 to col. 5, ll. 6 (bus controller); col. 5, ll. 14-15 (plurality of igniters); and, col. 5, ll. 33-35 (unique signal). Darby discloses an ECU that can communicate with the igniters of Adams using a single command that can be used to address as few as one and as many as all

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of the igniters of Adams. (See, Darby, col. 2, ll. 28-36; col. 3, ll. 20-25; col. 10, ll. 60-65; col. 13; ll. 48-55). The reference list is not exhaustive but the Darby specification makes it very clear that the ECU can address any and all of the igniters. The analog condition to firing condition subject matter of applicant's claim 33 is anticipated by the analog to digital converter disclosed in Darby. (See, Darby, col. 8, ll. 12-15; col. 14, ll. 3-40).

8. With respect to claim 4, refer to Adams, col. 5, ll. 29-32 (multiplex signals).

9. With respect to claims 5, 8, 35 and 37, refer to Adams, col. 4, ll. 55-63 (storage capacitors with capacitance of 2.2 microfarads). Applicant discloses a capacitor with a capacitance of 2.0 microfarads that "can be" charged in 5 milliseconds or less. As stated above, the charging time of a capacitor is not only a function of the load of the capacitor but several other factors as well. Applicant does not disclose those other factors. In any event, a charging time of 5 milliseconds or less is inherent in a capacitor with a capacitance of 2.2 microfarads.

10. With respect to claims 6 and 9, refer to Adams, col. 4, ll. 10-18 and Figs. 6, 7 (bleed resistors).

11. With respect to claim 7, refer to Adams, Fig. 5.

12. With respect to claims 11 and 12, refer to Adams, col. 5, ll. 1-13 (serial and parallel communications).

13. With respect to claims 33 and 63, refer to Adams, col. 5, ll. 52 to col. 6, ll. 8 (transmitting means, altering means, storing means, assigning means).

14. With respect to claim 36, refer to Adams, col. 3, ll. 54-56 (milliamps).

15.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6341562 issued to Brisighella in view of Adams. Brisighella discloses a plurality (col. 1, ll. 37-38) of initiator assemblies 28 to initiate a cable cutter (col. 1, ll. 38). However, Brisighella does not disclose the networked system of Adams. Adams discloses an electronic ordnance system as described above. At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the cable cutter (with initiator) of Brisighella with the bus ordnance system of Adams. The suggestion/motivation for doing so would have been to allow for the communication, testing and identification of each cutter (igniter) in the system.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adams in view of U.S. Patent No. 6403887 issued to Kebabjian. Adams discloses a networked ordnance system as described above. However, Adams does not disclose the use of at least one shielded twisted pair cable. Kebabjian discloses a shielded twisted pair cable 10. At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the network of Adams with the cable of Kebabjian. The

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suggestion/motivation for doing so would have been to prevent spurious noise and provide for high-speed communication.

19. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams/Darby. Adams/Darby discloses an electronic ordnance system as described above including a discharge capacitor. Adams/Darby does not disclose a capacitor that is charged in 5 msec or less. However, at the time of the invention, one of ordinary skill in the art would have found it obvious to provide the electronic ordnance system of Adams/Darby with a capacitor that charges in approximately 5 msec or less. The igniter in Adams/Darby is associated with vehicle protection devices in vehicles such as airbags. Hence, it is necessary to charge and discharge the safety devices as fast as possible. To select a capacitor with the charge time claimed by the applicant is only a matter of engineering design choice since charge time is merely a function of the capacitance in volts, load charge, and power supply charge.

20. Claims 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admas/Darby in view of Jullian. Adams/Darby discloses an electronic ordnance system as described above. However, Adams/Darby does not disclose the subject matter of applicant's claims 62 nor 63. Jullian discloses such subject matter. Specifically, Jullian discloses a blasting system comprising a blaster and blasting caps, the blaster operable to assign the blasting caps a unique identifying address (Jullian, col. 15, ll. 10-20 and col. 16, ll. 28-38). At the time of the invention, one of ordinary skill in the art would have found it obvious to provide Adams/Darby with the address assigning capabilities of Jullian. The suggestion/motivation for doing so would have

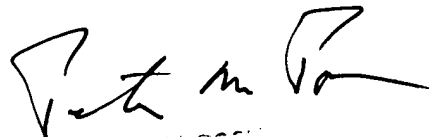
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been to make sure that each blasting cap has a unique address to avoid assigning errors that could have taken place during manufacturing in which 2 blasting caps could have received the same address.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (703) 308-5870. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (703) 306-4198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-7687.



Troy Chambers
Examiner